

DIGITAL

FCO

CATEGORY

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OF 10

FIELD CHANGE ORDER

NUMBER: KA45/KA47-F001

APPLICABILITY:

This FCO applies to MicroVAX 3100 Models 30, 40 and 80 with Version V1.1 firmware. The affected systems have a system serial number less than AY231***** (AYR built systems) and less than KA234***** for KAO built systems. ECO's 5420654-TWO002 & 5420652-TWO002 apply to this FCO.

PROBLEM & SYMPTOM:

Version V1.1 firmware (contained in 2 EPROM's) has the following bugs:

- * Halt value incorrect (NVRAM gets erased on Halt)
- * SCSI devices not seen after self-test failure
- * TSZ07 self-test failure
- * LA120 failure when used as a console device

SOLUTION:

Replace the V1.1 firmware (EPROM's P/N 23-149E8-00 and 23-150E8-00) with V1.2 (EPROM's P/N 23-223E8-00 and 23-224E8-00).

QUICK CHECK: With the system in console mode (" >>> " prompt), enter the command >>> SHOW CONFIG. The top line on the console terminal display should say:

KA45-A V1.2-343-V4.0 (for Model 30 or 40)
KA47-A V1.2-343-V4.0 (for Model 80)

If it is at V1.1, then the V1.2 firmware in this FCO should be installed.

PRE/CO-REQUISITE FCO: While installing this FCO, check to see if a Rev. B03 54-20662-01 module is installed in the system. If it is, then make note that it will require the DHW4X-F001 as well. The DHW4X-F001 FCO will be available in the Q4 timeframe.	MTTI HRS 1.2 hrs.
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TOOL/TEST EQUIPMENT: Field Service tool kit and Electrostatic kit.

FCO PARTS INFORMATION

FCO KIT NO.	DESCRIPTION OF CONTENTS
EQ-01663-01	23-224E8-00 & 23-223E8-00 EPROMs 36-19208-02, "2" Brady Marker, 36-19209-05, "E" Brady Marker, 36-19209-08, "H" Brady Marker
FA- 04999-01	FCO Document

FCO CHARGING INFORMATION (See Last Page)

APPROVALS

TECH. ENGINEER Greg Stillings	BUSINESS MGR. Vin Indorato	DSHQ LOGISTICS Barry Weinstein	DS PRODUCT SAFETY Robert Brister
MICROMEDIA Diane MacDonald	PARTS AVAILABILITY February, 1993	FCO REVISION A	FCO RELEASE DATE 8 February 1993

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Field Installation and Test Procedure

** NOTE **

Read these instructions completely before attempting installation of this FCO.

If problems are encountered during the procedures described herein, refer to the documentation listed in Step 21.

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*****
*
*                               CAUTION                               *
*
* The internal Field Replaceable Units (FRU's) handled during this      *
* procedure are sensitive and can be damaged by electrostatic discharge *
* (ESD).  Wear a wrist strap and place an anti-static mat under the     *
* system unit when working with the internal parts of the system unit.  *
*****

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1. Operating system shutdown: Have the customer notify all affected system users and shutdown the operating system following the procedures described in the operating system documentation.
2. Verify the firmware version and system configuration:
 - a. Press the Halt button on the back of the system unit to put the system in console mode. The system should respond with the console prompt (" >>> ") when in console mode.
 - b. Enter the command >>> SHOW CONFIG .

A sample system response follows for a system with a KA45 CPU board

with 8 MB memory and version V1.1 firmware, an RZ24 system disk and TZ30 tape drive, a DSW42 synchronous communications option and a DHW42 asynchronous communications option.

The following configuration display indicates a healthy system because:

- * All devices indicate an " OK " status
- * No soft errors (" ? ") are indicated
- * No hard errors (" ?? ") are indicated

KA45-A V1.1-31E-V4.0
 08-00-2B-16-44-48
 8MB

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|-----|
  
```

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DEVNBR	DEVNAM	INFO
1	NVR	OK
3	DZ	OK
4	CACHE	OK
5	MEM	OK
		8MB = SY=8MB, S0/1=0MB, S2/3=0MB, S4/5=0MB
6	FPU	OK
7	IT	OK
8	SYS	OK
9	NI	OK
10	SCSI	OK
		3-RZ24 5-TZ30 6-INITR
12	COMM	OK
		DSW41/42 2 CHANNEL V3.11-47
14	ASYNC	OK
		DHW41/42 V1.6

The top line of the display reveals the firmware version as follows:

KA45-A V1.1-31E-V4.0 for Model 30 or 40
 KA47-A V1.1-31E-V4.0 for Model 80

^^^^

|
 |_____ Firmware version V1.1 shown here.

Make a note of the firmware version and system configuration for reference later in Step 18.

3. Decision point:
 - a. If the firmware version is V1.1, go to Step 4.
 - b. If the firmware version is V1.2 or V1.3, and the system does not contain a DHW4x-xx option, then FCO installation is NOT required. Go to Step 19.
 - c. If a DHW4x option is installed, determine if the DHW4X-F001 FCO is required. If it is required (the 54-20662-01 is at part Rev. B3), and you have the appropriate EQ kit, install it at this time. If you don't have the appropriate EQ kit, order it and go to step 19.
4. Power-down the system: Turn off the following in the order shown:
 - a. Console terminal
 - b. All connected peripheral devices
 - c. All connected expansion boxes
 - d. The system unit
5. Remove all connections from the system unit's rear panel: Disconnect from the system unit the power cord, cables, loopback connectors and terminators.

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| d | i | g | i | t | a | l |
+-----+

```

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**** NOTE ****

You can remove the drive-mounting shelf/shelves with all the mass storage devices attached and without disconnecting the power cable and SCSI cable from the mass storage devices.

```

*****
*
*                               *
*          CAUTION              *
*                               *
*  When you disconnect the SCSI cable from the CPU board, ensure that you *
*  not damage or disturb the MS44 memory modules (SIMM).                 *
*                               *
*  Be careful not to disturb any green wire connections on the CPU board. *
*****

```

6. Remove the system unit's enclosure cover: Loosen the two captive Philips screws (12-30338-05) on the back of the system unit. Slide the cover forward and lift it up from the system unit.

7. Remove the mass storage drive mounting shelf/shelves:

- a. For the model 30, there is one drive mounting shelf.
 1. On the power supply unit, disconnect the 'flying lead' power cable that supplies power to the mass storage devices.
 2. Loosen the three captive screws that secure the drive mounting shelf to the enclosure (2 screws) and power supply unit (1 screw).
 3. Loosen the two captive Philips screws (90-09984-07) on the right of the enclosure.
 4. Slide the drive mounting shelf towards the front of the enclosure as far as it will go.
 5. Disconnect from the CPU board the 'flying lead' SCSI cable that extends from the drive mounting shelf. Refer to Figure 1 for the location of the SCSI connector.
 6. Lift the drive mounting shelf up from the enclosure and set it aside.

- b. For Models 40 and 80, there are two drive mounting shelves; these can be removed as one unit.
 1. On the power supply unit, disconnect the two 'flying lead' power cables that supply power to the mass storage devices.
 2. Loosen the two captive screws that secure the upper drive mounting shelf to the power supply unit.

d	i	g	i	t	a	l
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3. Loosen the two captive screws that secure the lower drive mounting shelf to the enclosure.
4. Loosen the two Philips screws (90-09984-07) that secure the lower drive mounting shelf to the enclosure.
5. Slide the upper and lower drive mounting shelf combination towards the front of the enclosure as far as it will go.
6. Disconnect from the CPU board the 'flying lead' SCSI cable that extends from the drive mounting shelf combination. Refer to Figures 1 and 2 for the location of the SCSI connector.
7. Lift the drive mounting shelf combination up from the enclosure

and set it aside.

8. Decision point:

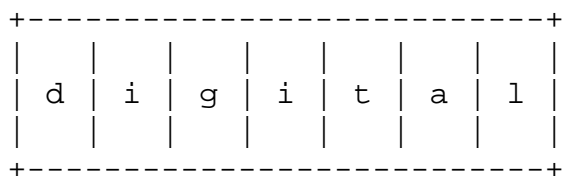
- a. If the system does not have a DHW41-AA, DHW41-BA, DHW42-AA, DHW42-BA or DHW42-CA, go to Step 10.
- b. If the system has a DHW4x-xx asynchronous communications option installed, the option's 54-20662-01 logic board should be removed to check the part rev to determine if DHW4X-F001 FCO should also be installed. In the case of Model 80 system, the DHW4x option MUST be removed to gain access to the firmware ROM's. Go to Step 9.

9. Remove the 54-20662-01 logic board:

- a. Refer to Figure 1 (Model 30, 40) or Figure 2 (Model 80) which shows the location of the 54-20662-01 logic board.
- b. Press the latch on one of the stand-off pillars and push up the corner of the 54-20662-01 logic board until the 54-20662-01 logic board is released from the stand-off pillar.
- c. Press the latch on the other stand-off pillar and push up the corner of the 54-20662-01 logic board until the latch releases the 54-20662-01 logic board from the stand-off pillar.
- d. Push up the 54-20662-01 logic board until the connectors on the 54-20662-01 logic board disengage from the connectors on the CPU board.
- e. Remove the 54-20662-01 logic board from the enclosure and note the part revision. If it is part revision B3 or below, install the DHW4X-F001 FCO before reassembling the system.

10. Remove and replace the firmware EPROM's:

- a. Refer to Figure 1 if your system is a Model 30 or 40, or Figure 2 for a model 80. These figures show the location of the firmware EPROM's that need to be replaced.



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* CAUTION *

* *

* If the EPROM's are installed in the wrong location or orientation, *

* power-up self-test will not pass and the components may be damaged. *

- b. Locate and remove the firmware EPROM with part number 23-150E8-00 (High Byte), using an IC remover or small screw driver. Replace with EPROM 23-224E8-00 supplied in the kit. Observe the orientation of the notch in the ROM package.
- c. Locate and remove the firmware EPROM with part number 23-149E8-00 (Low Byte), using an IC remover or small screwdriver. Replace with EPROM 23-223E8-00 supplied in the kit. Observe the orientation of the notch in the ROM package.

11. Affix the CPU board revision level: When upgraded with V1.2 firmware, the CPU boards take on a new revision level as follows:

Model 30/40: KA45-AA CPU board becomes revision level H2
 Model 80 : KA47-AA CPU board becomes revision level E2

Three brady markers are supplied in the EQ kit; E, H and 2. Place the appropriate brady marker over the bar code label revision sticker. The approximate label location is shown in Figures 1 and 2.

12. Decision point:

- a. For a system with a DHW4X option, go to Step 13.
- b. For a system without a DHW4X option, go to Step 14.

13. Re-install the 54-20662-01 logic board: After insuring that the 54-20662-01 is at part Rev. C01 (if not, install the DHW4X-F001 FCO) follow Step 9 in reverse, then go to Step 14.

14. Re-install the mass storage drive mounting shelf/shelves: Follow Step 7 in reverse, then go to Step 15.

15. Re-install the system unit's enclosure cover: Follow Step 6 in reverse, then go to Step 16.

16. Re-install all connections on the system unit's rear panel: Connect the terminators, loopback connectors, cables and the power cord to the system unit.

17. Power-up the system: Turn on the following in the order shown:

- a. All connected expansion boxes
- b. All connected peripheral devices
- c. Console terminal
- d. The system unit

+-----+						
d	i	g	i	t	a	l

18. System verification test: Wait for the system unit's power-up self-test to complete. Enter the command >>> SHOW CONFIG . Verify that:

- * The power-up self-test is successful (ie, no hard errors)
- * The firmware version is V1.2-343-V4.0
- * The status for all devices is the same as indicated from Step 2.b.

If problems are indicated, refer to the documentation listed in Step 21.

19. Reboot the operating system: Follow the system reboot procedures.

20. Complete the LARS form for this FCO activity. Refer to the last page of this FA document for further information.

21. MicroVAX 3100 Platform Maintenance Information Kit:

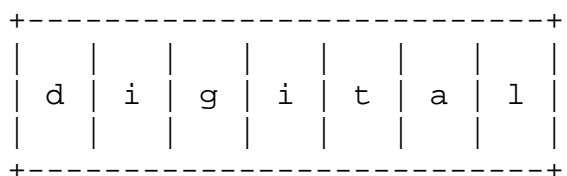
For more information, refer to the MicroVAX 3100 Platform Maintenance Information Kit (MIK) - part number QZ-K44AC-GZ - which contains the following documents:

Volume 1:

- EK-A0512-MG Guide to the MicroVAX 3100 Platform Maintenance Information Kit
- EK-A0541-CL Cover Letter for MicroVAX 3100 Platform Internal Options
- EK-A0510-MG BA42-A Enclosure Maintenance
- EK-A0511-MG BA42-B Enclosure Maintenance
- EK-A0519-MG Options
- EK-MV310-IP Illustrated Parts Breakdown

Volume 2:

- EK-A0513-MG KA45 CPU System Maintenance
- EK-A0514-MG KA47 CPU System Maintenance
- EK-A0574-HR CPU Reference Information



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Figure 1 - Diagram of KA45-AA CPU Board used in MicroVAX 3100-30, -40

Back of system - I/O panel

External connectors

KA45-AA CPU board
(54-20654-01)

P
O
W
E
R

S
U
P
P
L
Y

U
N
I
T

MS44 SIMM 3L
MS44 SIMM 2L
MS44 SIMM 1L

MS44 SIMM 3H
MS44 SIMM 2H
MS44 SIMM 1H

SCSI connector

*

DHW4x
Logic board
54-20662-01

*

> 23-224E8-00 | High byte EPROM

> 23-223E8-00 | Low byte EPROM

^
|
+----- Notch side

P U S H +-----+

CPU Board Revision Label-----> |H02 |

Front of system

```

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| d | i | g | i | t | a | l |
+-----+

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Figure 2 - Diagram of KA47-AA CPU Board used in MicroVAX 3100-80

{Latest version EPROM's are shown}

Back of system - I/O panel

External connectors

KA47-AA CPU board
(54-20652-01)

```

+-----+
| MS44 SIMM 3L |
+-----+
| MS44 SIMM 2L |
+-----+
| MS44 SIMM 1L |
+-----+

```

```

+-----+
| MS44 SIMM 3H |
+-----+
| MS44 SIMM 2H |
+-----+
| MS44 SIMM 1H |
+-----+

```

```

+-----+
| SCSI connector |
+-----+

```

High byte EPROM ->

```

+-----+
| > 23-224E8-00 |
+-----+

```

Both EPROM's are
located under the
54-20662-01 logic board

Low byte EPROM ->

```

+-----+
| > 23-223E8-00 |
+-----+
^
|

```

+--- Notch side

DHW4x
Logic board
54-20662-01

P
O
W
E
R

S
U
P
P
L
Y

U
N
I
T

*

P U S H +-----+

CPU Board Revision Label----->|E02 |

Front of system

+-----+
| d | i | g | i | t | a | l |
+-----+

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LARS

CATEGORY F		USA	GIA	EUROPE
Activity -				
(a)Contract and Warranty		W	U	W or K
(b)IN-DEC Contract		K		A
Hardware Segment Code		111	111	111
Non Contract/Non Warranty		F	F	F
(c)RTD/Off-site Agreement		F	F	F
Product Line		01	01	031
DEC Option	Model 30	450ZN	450ZN	450ZN
	Model 40	450ZM	450ZM	450ZM
	Model 80	470ZM	470ZM	470ZM
Option ID		(As applicable)		
Type of Call		M	M	M
Action Taken		D	D	I or V
Fail Area-Module-FCO-Comments				
	MV3100 Model 30 & 40	KA45-F001	KA45-F001	FCO-KA45-F001
	Model 80	KA47-F001	KA47-F001	FCO-KA47-F001
Material Used		EQ-01663-01	EQ-01663-01	EQ-01663-01

- (a) Warranty Optimum, Warranty Standard and Warranty Basic (on-site) Agreements; * Note material (only) free of charge for all customers.
- (b) Applies to IN-DEC Area Only
- (c) RTD=Return to Digital or Off-site Agreements; If Field Engineer On-site, use Activity Code "F".

FCO CHARGING INFORMATION

WARRANTY/CONTRACT

NONWARRANTY/NONCONTRACT

ON-SITE

OFF-SITE

ON-SITE

OFF-SITE

MATERIAL ONLY

TRAVEL/	EQ		EQ	TRAVEL/	EQ		EQ	ORDER-ADMIN, HANDLING
INSTALL	KIT	INSTALL	KIT	INSTALL	KIT	INSTALL	KIT	PKG, SHIPPING & EQ KIT
DEC	DEC	DEC	DEC	CUS	CUS	CUS	CUS	CUS

\\FCO_DOCS